

Appl. No.: 10/706,612  
Amendment. Dated September 25, 2006  
Reply to Office Action Dated July 25, 2006

### REMARKS

Claims 1-11 are pending in the application. Claims 9-11 have been withdrawn.  
Reconsideration of the rejection of claims 1-8 is respectfully requested.

#### Rejections Pursuant 35 U.S.C. § 102

Claims 1-8 stand finally rejected under 35 U.S.C. 102(e) as being anticipated by *Bone* (U.S. Pat No. 6,647,309). Reconsideration of this rejection is respectfully requested.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Claim 1 recites, *inter alia*:

performing an analysis by using values of at least one process parameter of the manufacturing process of a plurality of physical objects;

determining one physical object from the plurality of physical objects which **best characterizes** the plurality of physical objects, based on the analysis of the at least one process parameter; and

selecting the physical object which **best characterizes** the plurality of physical objects, for monitoring the manufacturing process.

(*emphasis added.*) More specifically, on pages 2-3, the Final Office Action states that

*Bone* teaches the following claimed limitations as cited below:

... determining one physical object from the plurality of physical objections which **best characterizes** the plurality of physical objects, based on the analysis of the at least one process parameter (Col.8, lines: 5-15); and

selecting the one physical object which **best characterizes** the plurality of physical objects, for monitoring the manufacturing process (Col.8, lines: 5-15).

(*emphasis added.*)

Furthermore, the Final Office Action states in the *Response to Arguments* in the paragraph bridging pages 4 and 5 of the Final Office Action that

...*Bone* teaches on Col.8, lines: 5-15 that a child lot is formed to undergo subsequent testing when an processing error is detected. The child lot is formed when a batch of

wafers undergoes incorrect processing as described in Col.7. The child lot is formed by selecting individual wafers from the batch, which was incorrectly processed. Thus Bone teaches precisely determining one physical object (wafer) from the plurality of physical objects (wafer batch), which is tested to monitor the manufacturing process. Bone merely teaches this determination and selecting steps are **repeated** to form a child lot to be tested. But the formation of this child lot requires a determination that the wafer selected is the *best* to be selected into the child lot.

(*emphasis in original*)

**Bone does not disclose “determining one physical object from the plurality of physical objections which *best characterizes* the plurality of physical objects”**

The phrase "child lot" is mentioned in *Bone* in only two paragraphs; namely the paragraph in col. 6, lines 10-22, and the paragraph in col. 8, lines 5-13 (this paragraph is also cited by the Final Office Action in the rejection):

The test wafer generation unit 320 is integrated into the computer system 130, which in one embodiment, is integrated with the APC framework. In one embodiment, the test wafers 310 are a subset or a "child lot" from an original production lot of semiconductor products 105. The test wafer generation unit 320 selects test wafers 310 and sends them to the metrology tool 150 for metrology data acquisition. In one embodiment, the test wafers 310 are **specialized** semiconductor wafers that are designed to test the processing tools 110, 112. The test wafers 310 can be **trial lot wafers** or **look-ahead wafers**. In an alternative embodiment, the test wafers 310 are **randomly selected** semiconductor wafers that are being processed by the processing tools 110, 112.

Turning now to FIG. 6, a child lot that represents a set of test wafers 310 is acquired, as illustrated in block 610 of FIG. 6. Alternatively, a set of predetermined test wafers 310 that are **generally scattered through a particular lot** of semiconductor wafers are acquired. In one embodiment, once the test wafers 310 from a lot of semiconductor wafers are identified, one of a plurality of methods known by those skilled in the art is employed to move the test wafers 310 from the normal production line onto a test site.

(*emphasis added.*)

However, Applicant was unable to find any disclosure or suggestion in *Bone* of a particular selection of wafers which **best characterizes** a particular lot of wafers. The "child lot" in *Bone* is either specialized test wafers (trial lot wafers or look-ahead wafers) or randomly selected wafers that are scattered through a particular lot. There seems to be no selection of

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wafers from the specialized test wafers. Where there is a selection, it is a random selection of wafers. *Bone* neither discloses nor suggests any particular standard, threshold level, or criteria for *selecting* any wafers for the "child lot".

The Final Office Action asserts that "the formation of this child lot requires a determination that the wafer selected is the *best* to be selected into the child lot." However, Applicant was unable to find any disclosure or suggestion in *Bone* of what would be a "best" wafer, a determination, and selection of such a "best" wafer.

Accordingly, it is respectfully submitted that *Bone* does not show the method steps of determining and selecting one physical object from a plurality of physical objects which *best characterizes* the plurality of physical objects (as compared to randomly selecting physical objects and *assuming* that the selected physical objects representative of the overall lot as in the prior art), for monitoring the manufacturing process of the plurality of physical objects, as recited in claim 1 of the instant application. Therefore, the invention as recited in claim 1 of the instant application is believed not to be anticipated by *Bone*.

Claim 1 is, therefore, believed to be patentable over *Bone*. Claims 2-8 are ultimately dependent on claim 1. Accordingly they are believed to be patentable for the same reasons. In view of the foregoing, reconsideration and allowance of claims 1-8 are solicited.

Respectfully submitted,



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